

NOTES ON THE MEGACHILID SUBGENERA  
XEROMEGACHILE AND DEROTROPIS

(Hymenoptera, Megachilidæ)<sup>1</sup>

BY THEODORE B. MITCHELL

Since the publications of Parts IV<sup>2</sup> and V<sup>3</sup> of the revision of nearctic *Megachile*, a number of small collections have been received for determination, resulting in a number of additional records of several species, and the discovery of two previously unknown species. One of these new forms, in *Derotropis*, was recognized as such by Mr. P. H. Timberlake and sent to me for description, and he is also to be credited with some additional information concerning the association of sexes in two species of *Derotropis*.

Subgenus XEROMEGACHILE Mitchell

MEGACHILE (XEROMEGACHILE) ANGELICA Mitchell

California: 1 ♂, Cajon Pass, April 13, 1936 (R. M. Bohart). 3 ♂, Carrville, Trinity County, 2400-2500 feet, May 29-June 14, 1934 (G. E. Bohart and E. C. Van Dyke). 2 ♂, Gold Lake, Sierra County, July 19 and August 4, 1921 (C. L. Fox). 1 ♂, Palmdale, April 11, 1936 (G. E. and R. M. Bohart). 1 ♂, Shasta Springs, July, 1914 (C. L. Fox). 3 ♂, Ventura County, April 13, 1936 (G. E. and R. M. Bohart).

MEGACHILE (XEROMEGACHILE) BLAISDELLI Mitchell

California: 2 ♀, Laguna, San Diego County, June 7 and 23, 1926 (W. S. Wright). 1 ♀, Laguna Mountains, June 29, 1921. 1 ♀, Mammoth, July 5, 1933 (G. E. and R. M. Bohart). 3 ♀, Mint Canyon, Los Angeles County, April 26, 1936 (E. G. Linsley, on *Chaenactis glabriuscula*). 1 ♀, Trinity County, June 13, 1934 (G. E. and R. M. Bohart).

MEGACHILE (XEROMEGACHILE) BRIMLEYI Mitchell

North Carolina: 1 ♂, 2 ♀, 10 mi. S. of Lillington, June 23, 1937 (Mitchell).

MEGACHILE (XEROMEGACHILE) BRUNERI Mitchell

California: 1 ♂, Owen's Valley, Inyo County, August 2, 1936 (G. E. and R. M. Bohart).

<sup>1</sup> Research Contribution No. 1, published with the aid of the State College Research Fund, Department of Zoology, North Carolina State College of Agriculture and Engineering of the University of North Carolina.

<sup>2</sup> Trans. Am. Ent. Soc., LXII, 117-166, 1936.

<sup>3</sup> Op. cit., 323-382, 1937.

## MEGACHILE (XEROMEGACHILE) CASADÆ Cockerell

Colorado: 1 ♂, 1 ♀, Poudre Canyon, June 9, 1934 (M. K. Maehler).

Texas: 2 ♀, Austin, May 8, 1901 (A. L. Melander).

Utah: 1 ♂, St. George, May 27, 1935 (E. C. Van Dyke).

## MEGACHILE (XEROMEGACHILE) DAKOTENSIS Mitchell

Illinois: 1 ♀, August 1, 1898 (no locality given) (A. L. Melander).

Minnesota: 1 ♀, Anoka County, June 24, 1933 (E. C. Murdock).

Nebraska: 2 ♂, 1 ♀, Harrison, July 2, 18, and 19, 1936 (J. Player).

## MEGACHILE (XEROMEGACHILE) DEFLEXA Cresson

North Carolina: 3 ♂, 10 mi. S. of Lillington, June 23, 1937 (Mitchell).

## MEGACHILE (XEROMEGACHILE) FUCATA Mitchell

Arizona: 2 ♂, Tucson (A. Koebele).

## MEGACHILE (XEROMEGACHILE) HILATA Mitchell

California: 1 ♀, Glacier Lodge, Big Pine Creek, Inyo County, 8,000-11,000 feet, August, 1929 (Isabel McCracken). 1 ♀, Hat Creek, Mono County, August 1, 1936 (G. E. and R. M. Bohart).

Utah: 1 ♀, Logan, July 20, 1931 (W. Thomas).

## MEGACHILE (XEROMEGACHILE) HISTRATA Mitchell

California: 1 ♀, Palm Springs, Riverside County, April 9, 1936 (on *Larrea glutinosa*).

Colorado: 1 ♀, Livermore, July 15, 1900.

## MEGACHILE (XEROMEGACHILE) INTEGRATA Cresson

Illinois: 2 ♂. (No locality given) (A. L. Melander).

North Carolina: 1 ♂, 13 ♀, Carolina Beach, August 7 and 10, 1937. 1 ♂, 1 ♀, 10 mi. S. of Lillington, June 23, 1937 (both Mitchell).

## MEGACHILE (XEROMEGACHILE) LEGALIS Cresson

Colorado: 1 ♂, Lump Gulch, near Gilpin, August 8, 1934 (H. G. Rodeck).

## MEGACHILE (XEROMEGACHILE) MANIFESTA Cresson

California: 1 ♀, Carson Pass, 8,000 ft., Sept. 2, 1934.

Colorado: 2 ♀, Fort Collins, Sept. 21, 1930 and Oct. 5, 1935.

2 ♂, 6 ♀, Masonville, Sept. 5 and 6, 1934. 1 ♀, Vir. Dale, Aug. 2, 1935 (all M. T. James).

Wyoming: 3 ♀, Cheyenne, Aug. 6, 1931.

MEGACHILE (XEROMEGACHILE) MICHENERI Mitchell

California: 3 ♂, San Diego. (S. D. Nat. Hist. Mus.)

MEGACHILE (XEROMEGACHILE) MOSCHATA Mitchell

California: 1 ♀, Laguna, San Diego County, June 7, 1926 (W. S. Wright). 2 ♀, Laguna Mountains, June 29, 1921. 1 ♀, Mint Canyon, Los Angeles County, Apr. 26, 1936. (E. G. Linsley, on *Chænactis glabriuscula*). 3 ♀, no data.

MEGACHILE (XEROMEGACHILE) MUCOROSA Cockerell

Colorado: 1 ♂, Larimer County, July 19 (M. T. James).

MEGACHILE (XEROMEGACHILE) NEVADENSIS Cresson

California: 3 ♂, 3 ♀, Antioch, Contra Costa County, Sept. 6, 9 and 13, 1936 (E. C. Van Dyke and R. M. Bohart). 1 ♂, Carson Pass, Sept. 3, 1933 (G. E. and R. M. Bohart). 1 ♂, Hay Creek, Mono County, Aug. 1, 1936, 1 ♂ Lake City, Modoc County, Aug. 2, 1922 (C. L. Fox). 4 ♂, Mammoth, Mono County, Aug. 7, 1936 (G. E. and R. M. Bohart). 1 ♀, near Oakley, Contra Costa County, Sept. 6, 1936 (E. C. Van Dyke). 1 ♂, Owen's Valley, Inyo County, Aug. 2, 1936 (G. E. and R. M. Bohart). 5 ♀, San Diego. (S. D. Nat. Hist. Mus.).

Idaho. 1 ♂, Ridgedale, Aug. 23, 1915.

Oregon: 2 ♂, 10 mi. E. of Prineville, Aug. 20, 1937 (Bolinger-Jewett).

Washington: 1 ♀, Yakima (A. L. Melander).

MEGACHILE (XEROMEGACHILE) PARKSI Mitchell

Texas: 1 ♀, May. 1 ♀ Austin (both A. L. Melander).

MEGACHILE (XEROMEGACHILE) PSEUDONIGRA Mitchell

California: 1 ♀, Midway, May 24, 1936 (M. Cazier). 2 ♀, Mint Canyon, Los Angeles County, Apr. 26, 1936 (E. G. Linsley, on *Chænactis glabriuscula*).

MEGACHILE (XEROMEGACHILE) RUBI Mitchell

North Carolina: 2 ♂, Raleigh, May 9, 1937 (Mitchell).

MEGACHILE (XEROMEGACHILE) SUBNIGRA Cresson

Oregon: 1 ♀, Cornucopia, 7100 ft., July 25, 1936. 1 ♂, 25

mi. E. of Prineville, 3800 ft., July 13, 1936 (both H. A. Scullen). 1 ♂, Steen Mountains, Harney County, June 25, 1922 (E. C. Van Dyke).

Washington: 1 ♀, Grand Coulee, Coulee City, June 25, 1902, 3 ♀, Lind, June 1, 10 and 12, 1919 (F. W. Carlson). 1 ♂, Pullman, May 21, 1921 (Walter Herreid).

MEGACHILE (XEROMEGACHILE) WHEELERI Mitchell

California: 1 ♂, Antioch, Sept. 6, 1936 (G. E. Bohart). 1 ♀, Bird Lake, Tulare County, Aug. 21, 1933 (Isabel McCracken). 1 ♂, Buck Creek, Modoc County, July 21, 1922 (C. L. Fox). 1 ♂, 6 ♀, Diamond Lake, Douglas County, Oregon, 5182 ft., Aug. 24, 1937. 1 ♂, near Harden Lake, Yosemite Park, July 20, 1930 (E. C. Zimmerman). 1 ♂, 1 ♀, Lick Creek, R. S. Wallawa Nat. For. Ore., 4600 ft., Aug. 16, 1937. 1 ♂, 1 ♀, Mineral King, Aug. 2, 1935 (G. E. Bohart). 2 ♂, Spark's Lake, Deschutes Nat. For. Ore., 4800 ft., Aug. 21, 1937 (all Bolinger-Jewett). 1 ♀, Tioga Pass, 10,000 ft., Aug. 2, 1931 (E. R. Tinkham).

North Dakota: 1 ♀, Dickerson, July 20, 1936. 1 ♀, Garrison, Aug. 17, 1935 (both H. S. Tolford).

Oregon: 2 ♂, Mt. Hood, 3000-6000 ft., Aug. 6, 1925 (C. L. Fox). 1 ♀, Seneca, July 24, 1935 (Joe Schuh). 3 ♂, 1 ♀, Steen Mountains, Aug. 6, 1936 (S. Jewett, Jr.). 1 ♂, Strawberry Lake to Slide Lake, Grant County, 6800-7000 ft., July 16, 1936 (H. A. Scullen).

Washington: 2 ♀, Hells Crossing Forest Camp, Yakima County, July 27, 1936 (E. C. Van Dyke).

Megachile (Xeromegachile) couleana Mitchell, n. sp.

Female. Size: Length 14 mm.; breadth of abdomen 5 mm.; anterior wing 10 mm.

Structure: Face very slightly broader than long; eyes subparallel; clypeal margin straight and entire medially; mandible 4-dentate; basal joint of flagellum very slightly longer than the pedicel or the second joint which are subequal; lateral ocelli subequally distant from eyes and edge of vertex; vertex slightly incurved, slightly convex; cheeks very slightly broader than eyes; metatarsi only slightly shorter and narrower than their respective tibiae; abdomen broad, second to fourth terga grooved basally, fifth not grooved, sixth straight in profile, with no visible erect hairs.

Punctuation: Close and fine on vertex, cheeks, supraclypeal area and clypeus above; slightly more coarse on clypeus below, the margin impunctate, shallow and indistinct on cheeks; fine

on dorsum of thorax, definitely separated in center of mesonotum and scutellum, the surface tessellate and dull, slightly more coarse and close on pleura, becoming still more coarse toward sternum; minute and indistinct on abdomen basally, becoming more definite and rather widely separated to the shining fifth tergum, fine and crowded on the sixth, but obscured by the tomentum.

Color: Black, antennæ beneath, tegulæ and legs dark reddish-fuscous; wings fusco-hyaline, slightly darker apically, with brownish-ferruginous nervures; spurs yellowish-ferruginous.

Pubescence: Entirely pale, white on sides and below, more cream-colored above, with no visible dark hairs on vertex, thorax or abdomen (dorsum of thorax mostly denuded); first to fifth abdominal terga with entire white apical fasciæ, the sixth entirely covered with subappressed whitish tomentum which largely hides the surface; scopa entirely white except for a few short golden hairs apically.

Type, female; Soap Lake, Grand Coulee, Washington, June 29, 1902 (Wash. State College).

In my key to the species of *Xeromegachile* this runs to either *rubi* or *hilata*. The peculiar ridged sixth tergum of the eastern species *rubi* at once distinguishes the two, while *hilata* differs in the presence of erect pubescence on the sixth tergum, the presence of dark pubescence on vertex, mesonotum and abdominal terga, as well as in other less conspicuous characters.

#### Subgenus DEROTROPIS Mitchell

In the revision of the subgenus *Derotropis*<sup>2</sup>, two species, *astata* ♀ and *pascoensis* ♂, were associated because of the belief that they represented the two sexes of one species. Further collecting by Mr. Timberlake, who originally suggested the association, has caused him to regard this as an error. He finds in his collecting that *gravita* ♂ and *gabrielensis* ♀ are also involved, and that apparently *astata* should be associated with *gravita*, and *gabrielensis* with *pascoensis*. He notes a structural similarity between the respective males and females thus associated in that the relative lengths of the first and second joints of the labial palpi are the same in the two sexes in each case, and finds also that the mesosternum of *astata* is slightly concave and sparsely punctate, suggestive of the more extreme condition of the mesosternum of *gravita*.

Since corresponding with Mr. Timberlake, I have carefully measured the labial palpi of these forms and find the ratio of

the first to the second joint of the labial palpus in both *gravita* and *astata* to be approximately 70:98, while in both *pascoensis* and *gabrielensis* it is 60:85. This structural evidence, coupled with the fact that these respective sexes can be associated in the field indicates rather conclusively that this association is the correct one.

#### MEGACHILE (DEROTROPIS) PASCOENSIS Mitchell

*Megachile (Xeromegachile) pascoensis* Mitchell, Trans. Am. Ent. Soc. LIX, p. 320, 1934.

*Megachile (Xeromegachile) gabrielensis* Mitchell, Trans. Am. Ent. Soc. LIX, p. 346, 1934.

*Megachile (Derotropis) pascoensis* Mitchell, Trans. Am. Ent. Soc. LXII, p. 162, 1936.

*Megachile (Derotropis) gabrielensis* Mitchell, Trans. Am. Ent. Soc. LXII, p. 159, 1936.

California: 1 ♀, Altadena, May 2, 1936 (Michener, on *Lotus scoparius*). 3 ♂, Antioch, Apr. 25, 1936 (M. Cazier). 1 ♀, Midway, May 24, 1936 (M. Cazier). 2 ♀, Mineral King, July 31, 1935 (G. E. and R. M. Bohart).

#### MEGACHILE (DEROTROPIS) GRAVITA Mitchell

*Megachile (Xeromegachile) gravita* Mitchell, Trans. Am. Ent. Soc. LIX, p. 322, 1934.

*Megachile (Xeromegachile) astata* Mitchell, Trans. Am. Ent. Soc. LIX, p. 345, 1934.

*Megachile (Derotropis) gravita* Mitchell, Trans. Am. Ent. Soc. LXII, p. 160, 1936.

*Megachile (Derotropis) pascoensis* ♀ Mitchell, Trans. Am. Ent. Soc. LXII, p. 162, 1936.

California: 2 ♀, Lagunitas, July 15, 1928 (E. P. Van Duzee). 1 ♂, Midway, May 24, 1936. 1 ♂, Nipinnawasee, May 24, 1936 (both M. Cazier). 1 ♀, Potwisha, Sequoia Nat. Park, 2000-5000 ft., May 20, 1929 (E. C. Van Dyke).

Oregon: 3 ♂, 3 ♀, Prospect, June 20, 1924 (C. L. Fox).

#### MEGACHILE (DEROTROPIS) ALAMOSANA Mitchell

Colorado: 1 ♂, White Rocks, Valmont, June 30, 1934 (M. and H. James). 1 ♂, Longmont, July 4, 1937 (L. Lanham).

#### MEGACHILE (DEROTROPIS) LAURITA Mitchell

Washington: 1 ♀, Asotin, May 20, 1923 (V. Argo).

## MEGACHILE (DEROTROPIS) LAURITA var. SEMILAURITA Mitchell

Utah: 1 ♀, Dolomite, May 18, 1934 (G. F. Knowlton).

## MEGACHILE (DEROTROPIS) SUBANOGREE Mitchell

Texas: 1 ♂, Sierra Blanca, Apr. 30, 1927 (J. O. Martin).

## MEGACHILE (DEROTROPIS) XEROPHILA Cockerell

California: 3 ♂, 4 ♀, Edom, Riverside Co., Mar. 28, 1936 (on *Geraea canescens* and *Larrea glutinosa*). 4 ♂, 2 mi. S. of Edom, Mar. 8, 1936 (on *Geraea canescens*). 1 ♂, 6 mi. S. of Edom, Mar. 8, 1936 (on *Larrea glutinosa*, all E. G. Linsley). 1 ♂, 5 mi. S. of Indio, Apr. 10 (Michener, on *Prosopis juliflora*). 1 ♂, Little Rock, Oct. 10, 1936 (G. E. and R. M. Bohart). 1 ♀, Palm Springs, Riverside Co., Apr. 10, 1936 (Michener, on *Cercidium torreyanum*).

On page 165 of the revision<sup>2</sup> *xerophila* is recorded on *Helianthus niveus*. Mr. Timberlake states that this plant was misidentified, the correct name being *Geraea canescens*.

## Megachile (Derotropis) astragali Mitchell, new species

The male of this species is the only one so far known in *Derotropis* with entirely simple anterior tarsi, and it differs also from the other males in the group in the lesser degree of specilization of the retracted fifth sternum. In the males of *gravia*, *pascoensis*, and others the fifth presternite has a conspicuous median spine-like apically directed protuberance which more or less fits into an emargination of the basal margin of the metasternite. This condition is entirely lacking in *astragali*, indicating, together with the simple front tarsi, that it is the least specialized of all the known species in the group.

The female runs to *subanogræ* in the key<sup>2</sup>, but differs from that species in the presence of pale pruinosity on the sixth tergum, as well as in other less evident details.

The second joint of the labial palpus is one and a half times the length of the basal joint in both sexes.

Male: Length 8 mm.; breadth of abdomen 3 mm.; anterior wing 6 mm.

Structure: Face slightly broader above than long; eyes slightly

convergent below; clypeal margin straight and entire; inferior projection of mandible subbasal, narrowly triangular; basal joint of flagellum narrower and slightly longer than the subequal pedicel and second joint, the remaining joints broader, only slightly longer than broad; lateral ocelli very slightly nearer to edge of vertex than to eyes; vertex nearly flat; cheeks broader than eyes; front coxal spines short, broad basally, triangularly acute, a small patch of short red bristles at base of each; front tarsi simple; hind metatarsus only half as long and broad as its tibia, the apical joint nearly as long as the metatarsus; apical margins of abdominal terga slightly depressed; carina of sixth tergum broadly rounded, with two or three slight irregular crenulations, the median carinate teeth of the apical margin of the tergum widely separated, close to the subacute lateral teeth; seventh tergum broad and quite robust, triangularly pointed medially.

Sternites: Lateral portions of fifth presternite triangular, broader than long, median portion linear in the much restricted central area, not at all protuberant, the apical sclerites nearly circular, covered in part with fine pubescence, metasternite rather widely separated from the presternite by a broad membranous area, basal margin evenly rounded, entire, lacking any median emargination, uniformly covered with short apically dilated setæ, poststernal stripe inconspicuous, the margin slightly incurved medially; lateral portions of sixth presternite much longer than broad, metasternal areas triangular, rather widely separated medially, uniformly covered with short apically flexed and dilated setæ, prosternal lobe nearly twice as broad as it is long, the margin slightly incurved, lateral angles subacute.

Genital armature: Stipites rather slender, gradually and slightly enlarged to the tip, the tip with a thin tuft of short pubescence; sagittæ slightly exceeding the stipites in length; volsellæ narrowed apically, the tips truncated.

Puncturation: Moderately coarse and distinct, but quite close on vertex medially and on cheeks, more sparse on vertex laterally, very fine and close on face and clypeus; close and deep on pleura and on mesonotum laterally, becoming sparse medially on mesonotum and scutellum, the surface polished; fine and close on the basal abdominal tergum and on the median terga laterally, but sparse and indistinct on discs medially, the surface polished, more coarse on the fifth, dense on the sixth medially, more sparse laterally.

Color: Black; anterior face of front femur ferruginous, legs otherwise black, claws and spurs ferruginous; tegulæ pale ferruginous, anterior portion blackened; wings hyaline, violaceous, nervures fuscous to ferruginous.

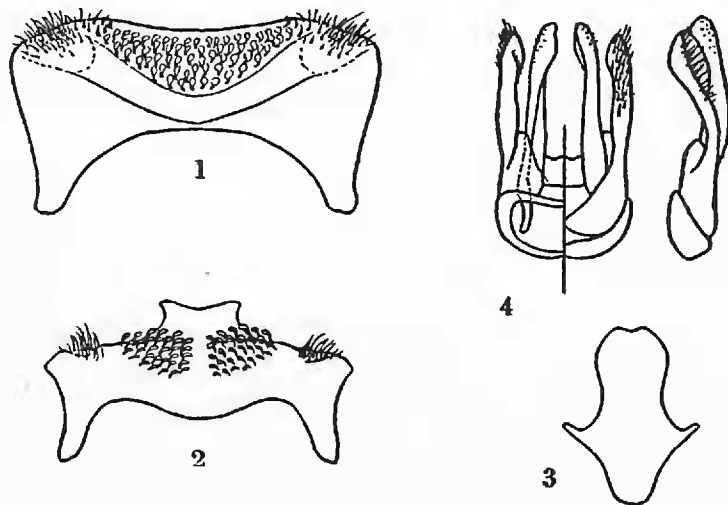


Pubescence: Entirely white, long and dense on face and on cheeks below, long and quite copious on vertex and thorax; thin on abdominal terga, but with white apical fasciæ on all the segments, these thin on the more basal ones; tarsi beneath with brownish-ferruginous pubescence.

Female. Size: Length 9 mm.; breadth of abdomen 3 mm.; anterior wing 6 mm.

Structure: Face about as broad as long; eyes nearly parallel; clypeal margin outcurved, median portion straight, entire; mandible with two distinct apical teeth, cutting edge to the inner angle rather short (compared with *gabrielensis*); joints of flagellum about as broad as long, the basal one slightly longer; lateral ocelli very slightly nearer to edge of vertex than to eyes; vertex about flat; cheeks somewhat broader than eyes; all the metatarsi considerably shorter and narrower than the respective tibiæ; abdominal terga only slightly depressed apically, the second to fourth more deeply depressed basally, the sixth straight in profile, the sides straight in dorsal aspect, the apex rather narrowly rounded.

Puncturation: Deep and distinct, but close on vertex medially, cheeks above, pleura above, and mesonotum laterally, more sparse on vertex laterally, cheeks and pleura below, and on scutellum, quite sparse on mesonotum medially where the surface is polished; coarse, deep and distinct on clypeus, close and fine along upper margin, quite fine and close on face above clypeus; close and fine on basal and apical abdominal terga, and on the others laterally,



Male sex characters of *Megachile (Derotropis) astragali* n. sp. Fig. 1. Fifth sternum. Fig. 2. Sixth sternum. Fig. 3. Eighth sternum. Fig. 4. Ventral, dorsal and lateral views of genital armature.

but the discs of the median terga with fine, sparse and rather indistinct punctures medially.

Color: Black; spurs and claws ferruginous; tegulæ pale ferruginous, a small anterior portion blackened; wings hyaline, violaceous, nervures piceous.

Pubescence: Entirely white on head, thorax, first and second abdominal terga and legs except for under side of tarsi where it is brownish; black on discs of third, fourth and fifth terga, the first to the fifth with entire dense white apical fasciæ, the sixth covered with thin silvery pruinose hairs, with no dark hairs in evidence; scopa white, entirely black on fifth and sixth sterna.

Type. Male: Mojave Desert, 9 miles north of Adelanto, San Bernardino County, California, April 20, 1937 (C. M. Dammers, on *Astragalus lentiginosus* var. *fremontii*). Allotype: Female, topotypical. Paratypes: 3 ♂, topotypical.

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#### LONGEVITY IN THE CERAMBYCIDÆ.

Scattered through entomological literature are a few brief accounts of adult Cerambycidæ emerging from wood which had been made up into furniture for several years. Since the immature forms of the majority of longicorns require a bark covering during their early life history, this is generally interpreted as evidence that larvæ were in the wood prior to its manufacture as furniture. Unfortunately, there are very few statements as to the actual period of time involved, and, where native species were involved, perhaps some uncertainty as to when they entered the wood. It would therefore seem of interest to report that Mr. P. C. Ting has recently submitted for determination adults of *Stromatium fulvum* Villers, a European species, which had emerged from furniture brought to this country from Italy in 1925. An investigation revealed that several benches imported in a single lot had been distributed to various places in San Francisco. Apparently nearly all of the benches were infested and adults emerged in October 1935, July 1937, and August 1938, with larvæ still present in some numbers. This furniture had been newly manufactured just prior to its export from Italy in 1925 and it seems quite clear that the larvæ must have been in the wood for periods of ten, twelve, and thirteen years, respectively.—E. Gorton Linsley.